

Patent Application No. 10/737,381
Attorney File No. H0004442

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By: 
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OFFICIAL

In re patent application of:
Willi J. Smith

Serial No. 10/737,381

Filed: December 12, 2003

For:
HEAT EXCHANGER THERMAL
INDICATOR

Group Art Unit: UNASSIGNED

Attorney Docket No.: H0004442

Examiner: UNASSIGNED

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

Dear Sir:

Applicant respectfully requests that the above-identified patent application be amended before examination without prejudice as follows:

Amendments to the Specification are reflected in the amended paragraphs beginning on page 2 of this paper.

Remarks begin on page 4 of this paper.

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Amendments to the Specification:

Please replace the paragraph beginning on Page 3, line 25, with the following amended paragraph:

--The invention will be more clearly understood with reference to the following drawing wherein:--

Please replace the paragraph beginning on Page 3, line 27, with the following amended paragraph:

--FIG. 1 is a schematic side view of a heat exchanger comprising a thermal indicator constructed in accordance with the practice of this invention. ~~and~~--

Please delete the paragraph beginning on Page 3, line 29, which starts with "FIG. 2 is a schematic"

Please replace the paragraph beginning on Page 7, line 5, with the following amended paragraph:

~~--FIG. 2 shows the heat exchanger 10 of FIG. 1 as rotated to look into a throat section 22 of the hot side fluid or gas inlet manifold 14.~~ A thermal indicator of this invention 24 is positioned within the heat exchanger to be contacted with an entering hot side fluid or gas inlet stream. It will be understood that the indicator should be positioned at a point in the heat exchanger where it will experience the highest temperature possible. In a preferred embodiment, the indicator is positioned directly in the incoming fluid stream across the hot gas inlet, e.g., it is placed across the hot side fluid or gas inlet throat section 22.--

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Please replace the paragraph beginning on Page 7, line 12, with the following amended paragraph:

--In an example embodiment, the thermal indicator 24 is provided in the shape of a element, e.g., a strip, a disk, a wafer or the like of a preselected material formed from one of the suitable materials noted above, e.g., a metal alloy specifically chosen for its melting temperature properties. The thermal indicator can be welded or otherwise bonded or adhered inside the heat exchanger. The melting temperature of the alloy should be at or above the predetermined maximum operating limit or critical temperature of the heat exchanger. The melting temperature can be controlled by careful choice of the material used to form the alloy and/or the respective amounts of the materials used to form the alloy. If the heat exchanger has been exposed to an operating temperature above the design operating limit of critical temperature, then the alloy will melt and thereby provide a visual indication that the ~~this~~ predetermined critical temperature has been exceeded.--